Notebook, N-99-00-00.1

This undated notebook was used by Edison, probably during the period 1899-1902. It has been used in both directions. Beginning at one end are notes, drawings, and calculations relating to the construction and operation of Edison's cement plant in Stewartsville, New Jersey. Included are cost and production estimates and lists of tasks to be undertaken. At the other end of the book are several pages of unidentified drawings followed by additional entries pertaining to the cement plant. The pages are unnumbered, and at least one page has been removed from the book. Approximately 160 pages have been used.

1930-

384

307

307-

8 am

79

7368

6912

456

42

121

22

44

44

44

3300

1728

36

79

1500

3950

1893

7900

1858

1036

1482

68

32 000-

350

6400

6400

6400

6400

20

400000

68

480

544

272

3264

3/47000

15666

25166-

35000

16660

7000

5000

5000

10000

15000

125-

10805-

5400

2150

2150

25

3/75500

25166

350

60

2100

2100

500

350

380

70

2660

700

30

2200

380

70

2660

4

10400

180

2100

600

3600

4500

9000

12500

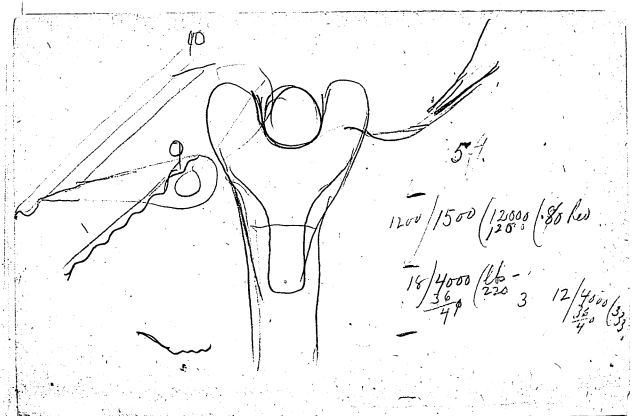
21500

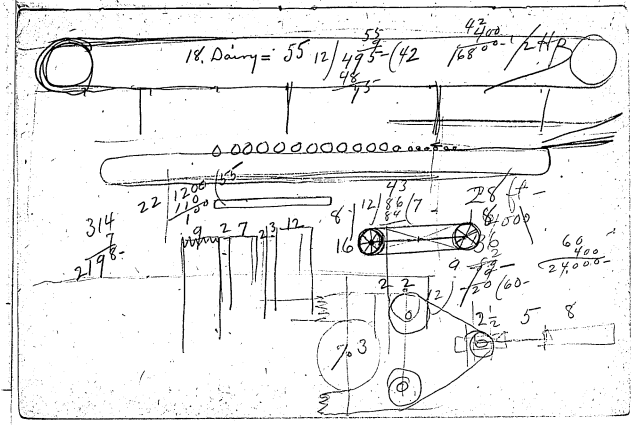
25

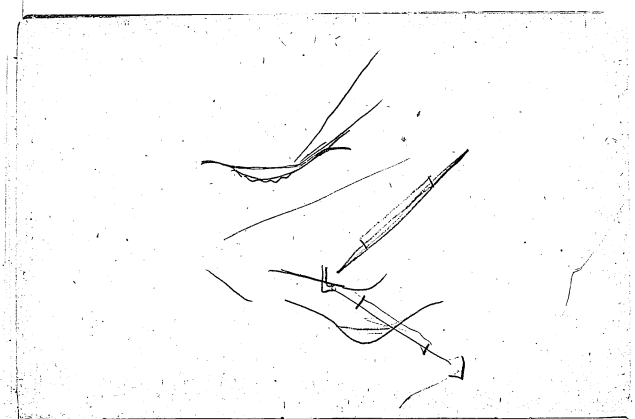
3500

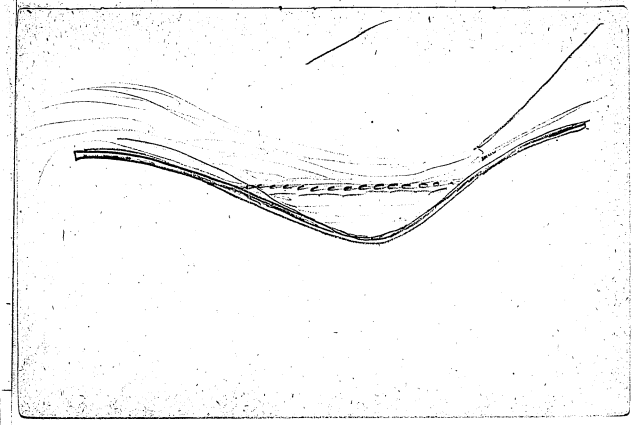
125000

3500 | 20
70.014
24000
10000
98000
3500
2,940.000


10
5
1200/1500
12000
120
80 lbs
18/4000
36
4
66
220
3
12/4000
36
4


18. Dairy = 55
12/495
55
48
42
400
168000
24 HP
155
22
1200
100
314
7
2198
9
27
213
12
8
12/86/7
43
80
16
28 ft
4000
6
2
9
60
400
24000
2 2
6
12
120
60
2½
5
8
7.3





110
5
5.5

100
500
350
2210
276

8)2210

36)3974(110
36
37
36
1

8)3180
397

36

10
53
60
0

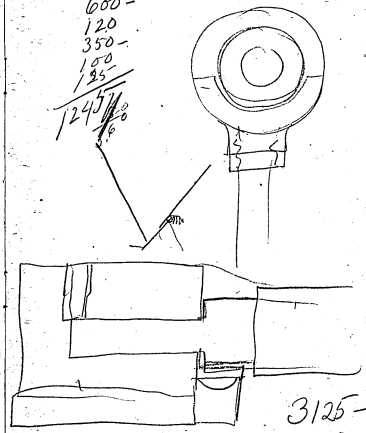
96)318(3

7 24-

144)3180(2.21
288
300
288
12

2.21
96)2210

600-
120
350-
150
125-
1245
0
6



3125-

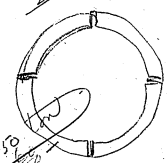
1245-
250
6225-0
2490
3125

25
30
750
750
750
225
12
105
96
9

24
12
48
24
288
12
576
288
345
324
216
216

187

9



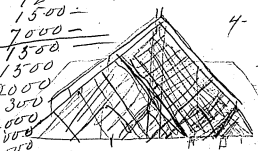
3000

459

2700

8500
12000
1200
1500
7000
1500
1500
2000
300
32000
4000
5000
1500
110000
6000
15000
5000
2000
6000
20000

10000
7000

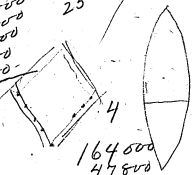


4
500
300
160
12

150
6
900

300
25

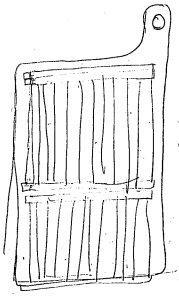
130
10
10
33
297
90 | 900

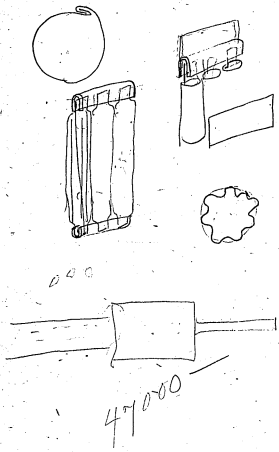


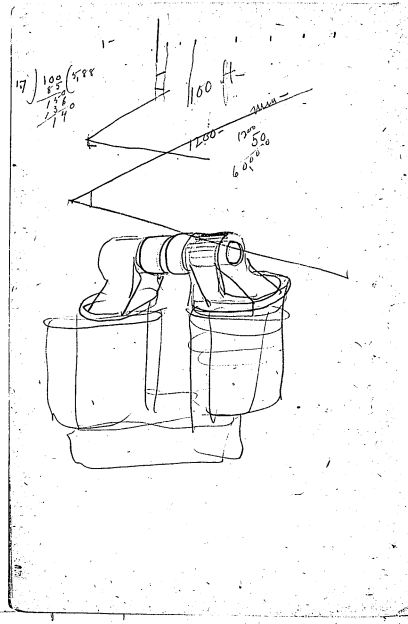
4

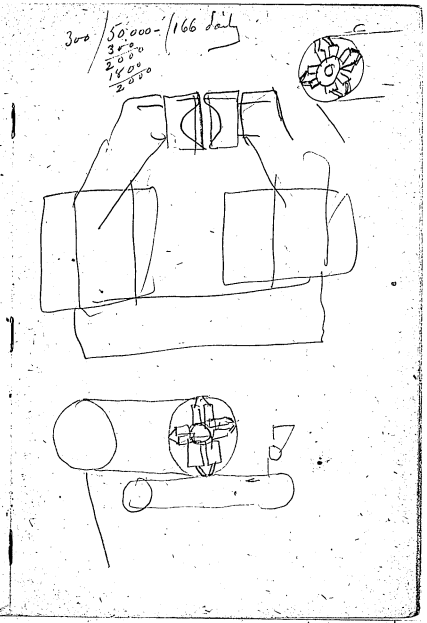
164000
47800
30000
241800
77000
31800

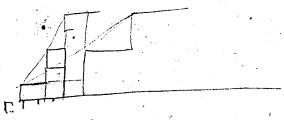
59
18
77




47000

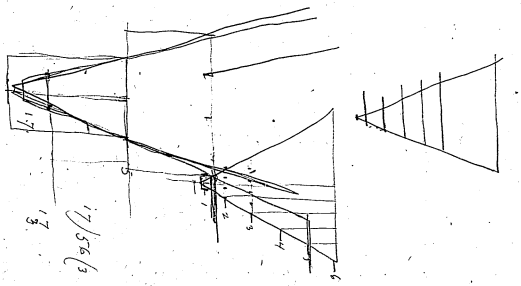

100 ft
1200
1700
500
6000


300
50,000
166 daily
3000
2000
1400
2000



$$\begin{array}{r} 56 \\ 1.7 \\ \hline 3.8 \end{array} \qquad \begin{array}{r} 56 \\ 10 \\ \hline 4.6 \end{array}$$

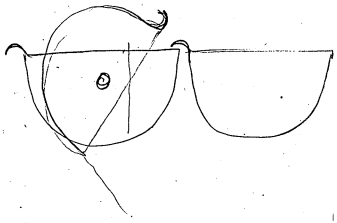
1.7 3.8 4.6 5.2 6.1



5 1.7 3.8 4.6 5.2 6.1

10 .85 1.9 2.3 2.6 3.05

20 .425 .95 1.15 1.3 1.52



50 Hp

2

30 ton – 4.5 ft

60000

33000 / 270000 – 80.3 – 165 / 40000 / 50 –

264000

600
2000
40) 12000 (20,000
120

60) 200 (4 ,,,
8000
480000
33000
15000

(15

326440
2611 2

40 - 64
4500
544
7200
6400
32000
16000
12
13200
12000
19200
16500

(5

15000
19
350
1050
1750
1050
700
133

16 Hp

1524

10 000 min -

60) 300 (5

20000
48
(24
66000
14000
33000 min

75
10000
75000
66000
9000
(23
6
29

203
206
84
495 -

1000
500
1495

Hoist 2 Cars 20 Ton 40 ft 1 min X 65 65
8

Hoist take up 5 seconds - 4000 lbs
4 ft - X 8
Elevator No 1 X 30
" 2 X 30 -
Conveyor 1 X 10
Dryer shaker X 5 — 103 take up eng
Elevator 3 18
Conveyor under stock H - 8
" " mixing 8 } slatum
Elevator 30
Conveyor top for mixing 10
Tumbling B6C - 5 HP
Belt under Cone - 6 .
Belt to dusters - 30 .
Belt top dusters - 15
Blowers - 40 .
2 Scrapers - 20 . 5
Return Belt to 10 .
Return over 3 Hp - 30 . 206 - on 7 hp eng
" Top 3 Hp - 10 .
Belt to Dust Cone - 5 .

60) 1.000 (

75 — 20 000 — 30 000 — 32 000 — 4

33 000 — 80. — 1 — 4000 — 30 000

3000 — 50 — 50 — 1 3000

Screw at Cone –	8 ×
Belt to Burners	4 ×
Screws along burners –	5 ×
Measuring	4 ×
Screws on 10 burners –	20 ×
10 Rotaries –	80 ×
10 Small cylinders –	20 ×
Fan	50 ×
2 Bucket Conveyors end rotary	10 ×
Bucket " to Rolls –	10 ×
Rolls	15 ×
Clinker H Elevator	10 ×
" Conveyor	10 ×
Under clinker	5 ⊙
Belt in tunnel to Elevator –	5 ⊙
Elevator –	50 ⊙
Scraper –	15 ⊙
Roller feeds	3 ⊙
2 belts for fines to R.S. –	6 ⊙
	330

Power H

1175
42
2350
7000
49350
4118
4728

39
4728

105525
392
526 25
472 5
9 57 5
3 157375
415737 5

4.28

4

1175
43
3525
4700
50525

118
42
236
472
4956

105525
392
21025
9475
3 157 5
4125750

150
9 00
7 50
1 95
29 5

Rescreen Elevator	30
Scraper over rescreen	18
Return belts 2 Conv.	10
4 screws for Cement	20
Return for fines	10
Belt to Block House	10
Belt in Block House	15
	30
5 Loaders	15
Baggers	
Sampling Rolls	X 15
Exhaust fan No 1 Stk	10 cp
Fan Dryer furnace	5 X
" " Exhaust top	15
	20
Fan in boilers	20 — p stm
Dust House	243
	243
	330
	966

Loans

75
5

25 ft. min –

Total 26 x 26000 – 650000 ft lbs

to the friction 65000 ft lbs –

26000
25
5000
2000
5000
6

3/4 –

2 1/4 in

3/400
133
225
665
266
266
12/2991 (249
24
59
48
108

1000 – 5000 lbs belting 1000 lbs rope –

Other 60 lbs each

Head pulleys – 500 lbs each –

Hd pulleys 5 ft or parts under 10 ft –

475 ft – 95 on top 47 below –

Wts on top – belt 3000
Pulleys – 9500
Head – 2000 12000
3000 15
26000
Bottom – belt 4750
pulleys 9500
36 – 26000 / 12000
1728 / 216000 (125
1728 40
4326 5000 –
3456
8640
8640

12

9 5

5/475
95

36 – 10 lbs –
36 –
9
10
9 60 –

36 40 –

36
36
216
108
1296

3/55
18 3

26000 – 1296

16866
250
843300
33732
421650 (218825

20) 421650 (21082.5

1728) 14400 (8.3
13824
576

1728) 110400 (64
10368
6720

12 HP felu shaft 10" Coff $\frac{1}{20}$

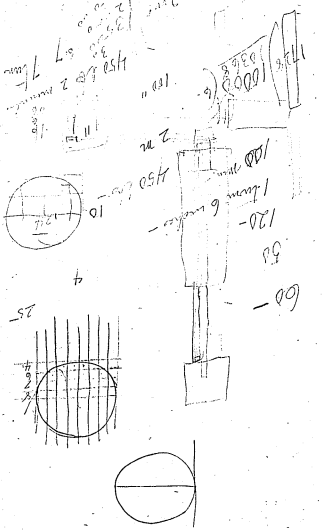
Hubs 12½ ft Wheel 1930 lbs -

	1930
arms both pulleys	7636 -
Rims -	3800 -
wood -	3200
bolts	300
	16866 - lbs Wt of

6 High Drive pulley -

6 Hp -

Hence Shaft	12 HP
3 pulleys	18 HP
Eng 10% of power	70 "
Pull of belts	6
	106 friction -



Hoistcars 65 Hp. belt driven from mainshaft at C Plant.

Dynamo on main shaft at CP to drive following

	HP
Hoist skips	5
Roller feed	8
Elevator No 1	30
" 2	30
Dryer Shaker	5
Furnace Dryer blower	5
Exhauster top Dryer	15
Conveyor top Stock House	10
	103-HP

On Power Station

Extra Mixing belt Top Stock House	10
Roller feeds at top bins	3
Extra Mixing belt bottom STKH	10
Elevator at other end of STKH	30
Bag Exhaust Blower	10
Sampling Machinery	15
	78

Machinery Driven by Dynamos on
main shaft 1st 5 Hight –

Belt under 1 Stk H	8
Elevator No 3	10
Mixing Barrell	5
Roller feeds under Stk 1	3
Belt under weighed Cone	6
Belt to Dust House	25
" over Dust House	10
40 blowers –	40
2 Scrapers –	20
Return Belt in dustes	8
" to top 5th Roll House	25
Belt over 5th	8
Carrying dust to Cone	6
	179

On Power station

Screw at Cone	8
Belt to Burners	5
Screws along burners	5
Measuring shaft	4
Return screws	5
	27

Carried	27
10 Screws in burners	20
10 Rotary Motors	80
10 " small cylinder	20
Fan	50
Bucket Conveyor End rotary	10
angle " " to rolls	10
Rolls	15
Elevator to Clinker H	10
Conveyor top " "	10
	252

Power from main shaft of 5 H Clinker shaft

Belt under stock House	5
" to Rolls	5
2 Rolls	50
Belt under 5 H	6
Elevator	50
Scraper over 5 H	15
Roller feeds	5
2 Belts return fines	6
	142

On power station

Rescreen/Elevator	25
Scraper over screen	18
2 Return Coarse Belts	10
4 Screws for Cement.	20
Belt to Block House	10
Belt in " "	10
5 Loaders	30
Baggers	15
Mixers -	20
Fan Baler House	20
Bowl dust house	25
	203

Resume –

CP Dynamos } Power station	103
	78
1st 5 H shaft Power House	179
	252
Power 5 H chunk shaft Power House	142
	263
	957

658
30
1974 0

1500
658
8430
13.5) 25260 (1871
135
1140
1080
960
945
15

of which power station has

78
252
203
533

& Dried

103
179
142
424 — Dynamo room & chaff.

Say 125 for light
533
658 in power station

Lights arc & Inc	arc	Inc
	2	6
Cp Engine room —	6	10
Yard — at CP —	4	6
Top at Dump	6	6
1st 2 + 3rd 36	2	10
Dryer —		4
Furnace		40
under clock House —		20
Top clock House	2	10
Measuring		15
Under Cone —		20
3 High shaftway		
	22	147

	arc	Lic
Engine -	2	6
pt. 5 ft high -	6	16
over 3 ft.		15
2 Runways bet Blowers & 5 ft hoist		12
Blower house		50
Blower floor -		
Top belt over blowers		25
under - floor or bottom		12
Runway to Dust cone -		6
~~Runway~~		
Screw belt at dust cone -	4	6
along rotaries -		20
Runways for returns		6
between rotaries,		40
at. Motors ~~for~~ for rotating		20
Coal screw		10
Small rotaries	10	20
Runways to Roll -		4
Roll & Elevator	2	4
Top Clinker House -		10
under		15
Rolls -	4	10
	28	312

	anc	Inc
Beltway under 5th.		15
Shaft room.		20
Engine room	2	6
5th high	6	16
over 5 Heights		40
Rescreen		60
Runway		60
Runway to Silk H.		10
" Top 5th H.		15
at Loaders	10	30
Boiler House	3	10
Oil House		6
Coal grinding		10
Yard	20	20
office		40
assay		20
Power House	4	10
Mine	4	10
	49	398

514
86
2570
2572
2769

1000

48 | 2769 (57.7
240
376
33
3457
45
4285
3428
3856.5

36

300 - 1000

24000
4
96000
83
5880

635
2
1270

125

1

27690

21.
1/2
4
21
2.5

12

24000
5
120000

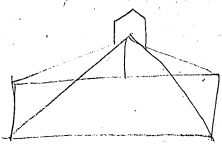
Resume

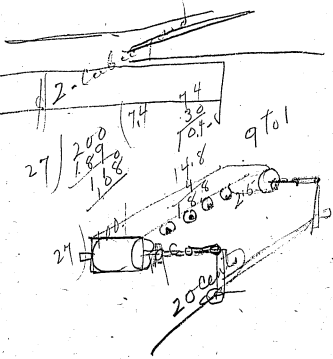
22	147
28	312
49	398
99 -	857
arc	Inc

arc
250
385
635

Inc
385 amp

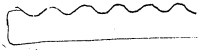
Machine shop to have its own power — 1 second hand 75 Hp Engine one No 4 Dynamo, 1 100 HP Boiler.





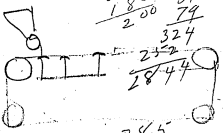
14 / 40 (2.85
28
122
122

2 1/2 Cent



4000. cubic ft free air

60 / 20000 - (333
180
200
180
200
36
79
324
252
2844



28.5

28 / 333 (12
28
53

12
69
72
30
270
270
270

25 / 7200 - (288 ft min

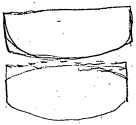
Rock can be drilled blasted and delivered at mill from rock at mill for $2\frac{1}{2}$ Cubic foot of wall –

It can be laid by contract with mortar or Cement for $7\frac{1}{2}$ foot.

The cost of Cement + sand mixed should not exceed say 1/4 is Sand + Cement 5 cents per foot,

Total 2.5 Rock
7.5 Labor
5.0 Cement + sand
15. Cents Cubic foot,

Dry wall can be blasted & laid for 1.00. a Cubic yard



this at least!

Ought to get these rolled

Hornsford Malleable Iron

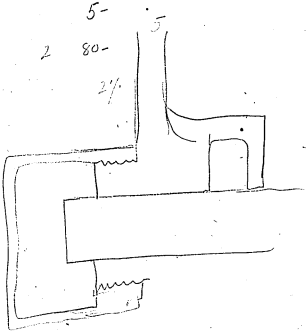
380
20
7600 30
22800

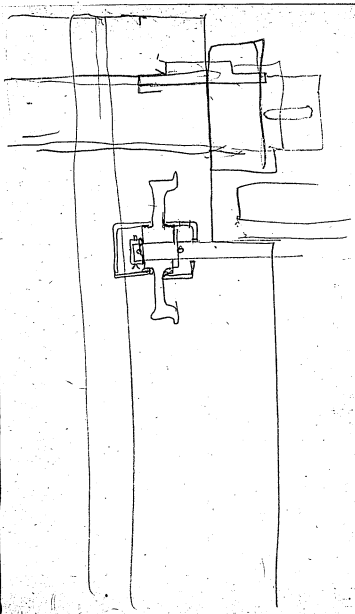
5-

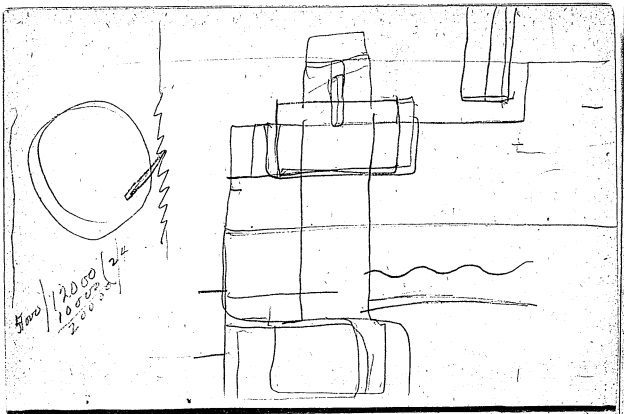
5

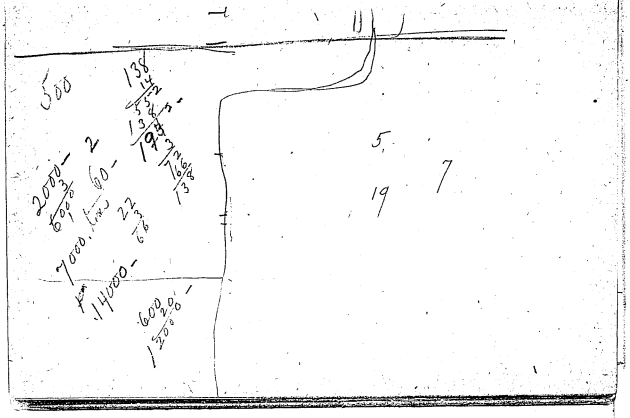
2 80-

2%









15 tons
75 lbs 30000 lbs –
150 lbs water –
1/2 lb H20 13 lbs air 4000 Cubic ft air
min
30 ~~3000 lbs~~ –
13
300
390
30 7000 | 10000 (
100 ft –
50 30 min –
15 1 Hour –
75 400 60) 4000 | Cubic ft / 66 Cubic ft min –
30000 360 / 400
15 tons hour.
6 / 90 20 / 90 / 180 –
3000 / 60 / 180000 531 –
100 Cuft 1 lbs water
12 60) 15000 (250 / 120 / 30 / 250 ft min
2240) 26400 / 2240 / 4000
90 / 450 / 90 / 900 / 9000
2240 lbs Coal hour 5.5
1' 30000 – 7500 200 / 7500 / 15000 / 150000
1200 / 24 / 2400 / 1200 / 500 261 00
4 / 12) 375 (31 / 36 / 15
250 / 25 / 75 / 15 / 35 / 75 / 45 / 525 / 3625
463 / 33 / 138 / 1380 / 1385 / 1590 / 7590 / 4554 / 5313
13 / 1875 / 625 / 8125

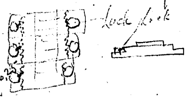
Notes = 1/2 Uto 26 –

1 Roller use Screw in [illegible] –

2 openings in V to shovel out in case its buried –

3rd glass hard chilled sleeve in babbit for Screw brngs, Canvas covers – same in rotaries –

4th plates on 5 High should be quickly removable. pbly have to be removed Every 2 = days –



1421 .16 – To 13 Cft
11 16) 1000 (62.5 / 960 / 420 / 32

5th Runway top dust house should be enclosed Stop dust going down on [illegible] blowers floor =

6th = Clinker rolls at Clinker House storage should be geared high So Not absorb much power –

7 = Top Chamber Stick to cast use
scraper on account sys pressure for
on shutting off a hole it will pile
up & break scraper use of 6
back with lips of possible
~~[illegible]~~ think can stop pressure
going between opening at brackets
by device at sliding end —
Man can set dumping device
from time to time —

8 = probably coal may have to be
thrown into rotary furnace through
small water jacked tube with
small quantity air under
great pressure as regular
blower air will even and expand
to 6 times bulk only go 700 ft
min & then may not throw
it far enough —

Screening system at Coal grinding house should be like rescreening in Cement a Coarse Coarse load + 004 screens Coarse load Coal for anthracite, but a Coarse screen of Coal ahead take place first so that nothing Coarser than say 15/1000 go to rescreening

5 High ahead have one big wheel ahead 2 for the turn of the rope =

36" Shears + no heavier than the present 24 = H. Babbit + good oiling system —

Ropes on 3 H. Covered in.

May be some doubt of single
rope will tip over okay right
place where lip or step
slides made pulsated chilled 9/m

Engine Hanson 700 H.P. Both
rubbed through gunny
possibly bldg shaved down
brick or stone -

3200 Idler Bramp —
Heavy oil —

7 Regrolls — 14 Bramp 14
60 5 High — 60
2 Engines & Shaft — 42
1 Eng — 7
Elevators — 12
gears on Rolls — 14
2 gallon hours — 149
moderate — 298

Rotary — 275
Head pulleys & gears 100
1 gal hour 375

very moderate — 400
1/2

300 lbs in 20 hours

300
375
200
875
20
45 | 17.50
135
40.5

135
17
945
135
229

390 | 16
20
32.01

300000 | 17
1728
1728
1728
1728

100 bushels

7 | 125
19

30.00
9000

50000 drops in gallon

180

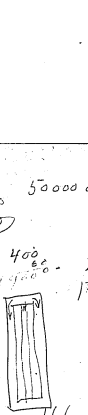
400
60
24000

280
168
100

100

8

480
16
25 5
48 8
7 8 7
537 6 — lb



166 — 8

12 | 1328 (110
12
12
12
8

137 lbs

2240
600
500
3340 (137
24
92
72
20
20

6 | 1000
6 | 166
23

9 | 500 (55
45
50

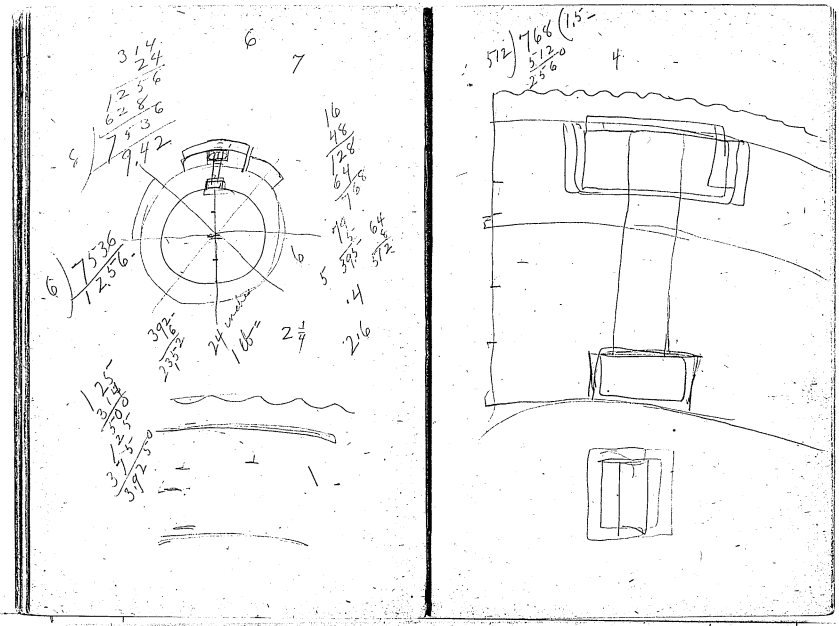
6 | 110
1 0

4 | 55
14
1

500
400
200000

45 | 2000
90000
3 yrs

45 ft | 2000
5 ft to end



1st assays Bill Hales + decide about location

2nd Having decided, get lowest price, roundest granitely of land possible knowing no Cement –

3rd Examine titles + close

3½ arrange what RR will do – permit to go under RR

4th In meantime while this is being done, make Contour lines for mill site RR line, quarry line, RR line into works,

5th Drill holes on Mill site first to ascertain character of ground

6th find nearest Gneiss rock for making rubble –

7 grade line for horse car line from Quarry to Mill –

8th prospect in Gneiss gulches for Sand –

9th Complete drawings for Machine shop + Extension —

10th look up tools get report + purchase arrangements for delivery to start erection of building

10½ order lumber etc for Machine shop + shed

11th find boiler for machine shop —

12 use Concrete mixer for Engine —

13 order ~~steam~~ shovels ~~etc~~ for 60 dipper or 60 shovel + cars — as soon as Cement land is closed + mill site drills + B&LWRR underground has —

14 - Have previously prepared the Excavation lines for mill site also B&LWRR track lines Excavation + our drawings

15 do 14 immediately Land deal closed —

~~16 order lumber for mill~~

50 new
70 old
20 Rooms Miles —
15 " flats —

50 ~~[illegible]~~
on Dav 6 —

Neighborhood 60
old — 30
old Hamilton 20
Room — 35
145 —

145 new —
40 Alaska
185 —
20 Bung
25 other fixtures
230 —

16 — ~~[illegible]~~ Track from RR 1st
thing to be done —

17 get Engineer & Boiler for rubble
Crushing —

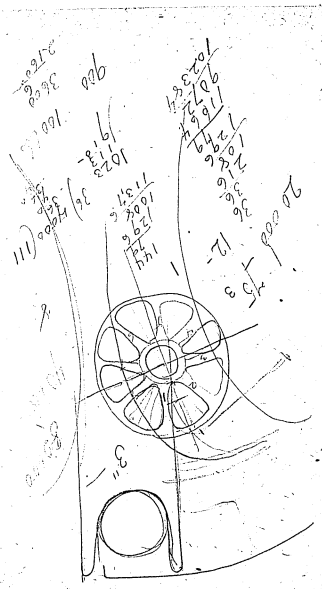
18 — Wells light for night work —

19 — Borrow locomotive for our use

20; Get Concrete mixer —

21 Some 30 lb rails & ties from
Edison NJ for tracks around
works & from Crusher

22 = Order Rail & ties for our railroad
so it can take advantage
point where shopping or
cut is necessary



23 order shaft to put 16 skips on as dumpers — for shovel & for Excavating Hull site —

24 = place order 6000 bbls cement,

25 — forge & pneumatic riveter possibly 2 each will be necessary in erecting shop = also 4 or 5 hand forges for riveting in place in blds —

26 Necessary jib jacks + tackle for erecting if we do not contract erecting =

27 = Dynamo for lighting shops

28 Lumber for Crusher house

29 = Water for boiler for machine shop + crusher boiler ~~of for~~ mortar transporting crew temporary

Shovels	25	25	
Drill	18	18	
	6		
Track	10	5	
Spike	8	8	
Loco	24	24	40
Cp	30	30	70
Mill 1	30	30	
Stp	8	2	80
Carp	20	6	700
Mac	10	3	
Helper	10	4	
Yard	10	5	405
Power Mgt	8		80
Inspect		13	
Spike	25	135	
	237		419
	173		620
	41		
		170	84
		102	
	237		
	48	800	4800
	789		
		237	
		245	

47820 / 87
38900
34200
33600

30. Dozen Carts + Horses

31 2 scrapers

32 Shovels picks etc —

33 Timbers for bridge over Pohatcong Creek

34. Derricks (small) for handling stone in masonry

~~35~~ -

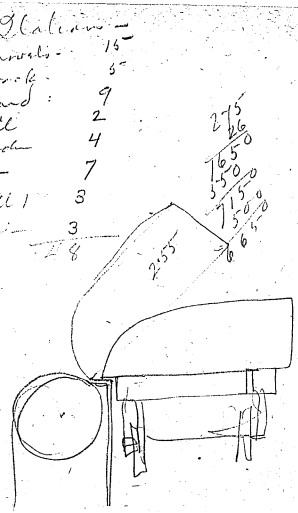
Notes =

Get catalogues of Hollow brick also address of fire brick people

Pittsburg firm are best find out who makes bricks for blast furnace stoves —

Estimate —

Screens -	15
Truck	5
Yard	9
Oil	2
Machine	4
CP —	7
Mill 1	3
Bin —	3
	48



Notes - we shall want a few Coarse screen plates for rubble Crusher - guess can make them on our shop

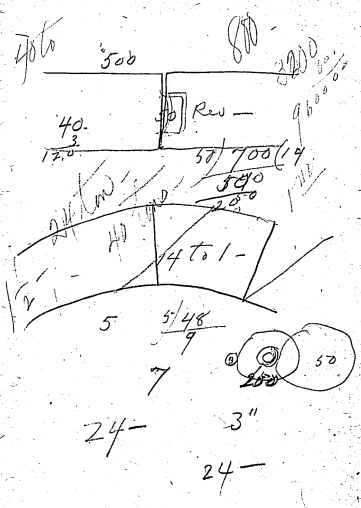
also a return Elevator —

We shall want 50 to 70 Motors, running from 5 HP to 50 HP - for conveyors work - Talk to Motor people Crocker W, Wyeal Elec + others as to price and time delivery

The Motors will be 5 10 15 20 30 40 + 50 HP + must run continuously at rated load ~~and~~ 24 hours without undue heating

they are to state heating
go at this at once -

get catalogues from foundry
people for a small foundry
Complete, Say that we only
want to make chilled rolls
24 dia - 72 face - 12" bore
and plates: 5 ft long 2 feet
wide 8 inches deep
chilled on face - and will
never pour more than 6 or
8 tons in one day -
We also want a small
furnace to pour 3 or 400
lbs in one day with
all appliances -
get price Erected & plan
of building - gross price



etc we build bldg - they do rest,

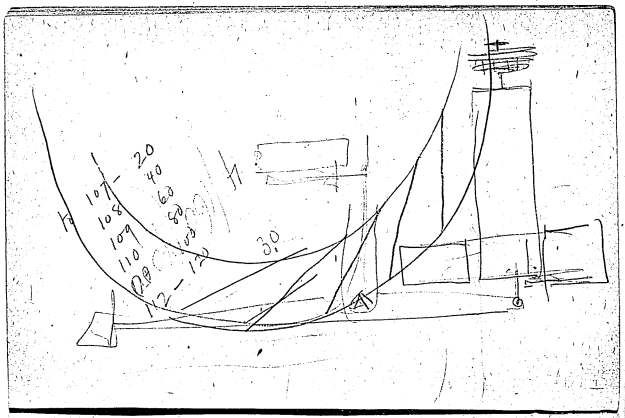
We shall want probably
3 Steam Drills, Drill rod etc,

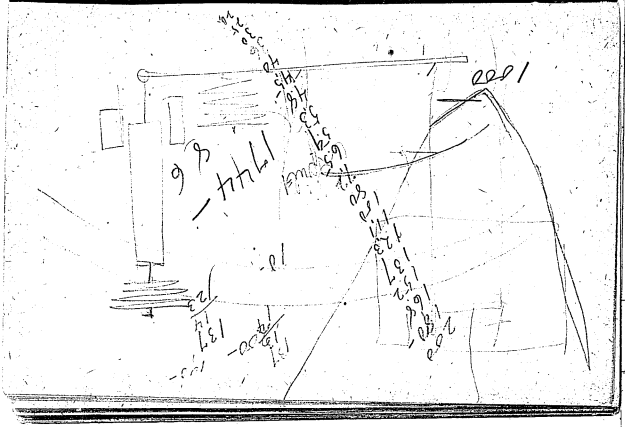
We shall need 4 or 5
foremen on excavation -

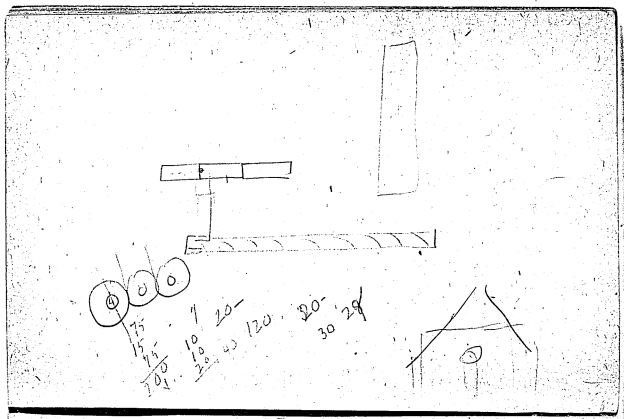
See Cunningham see how many
of those rough rock masons
he can get at Ithaca when
we want them -

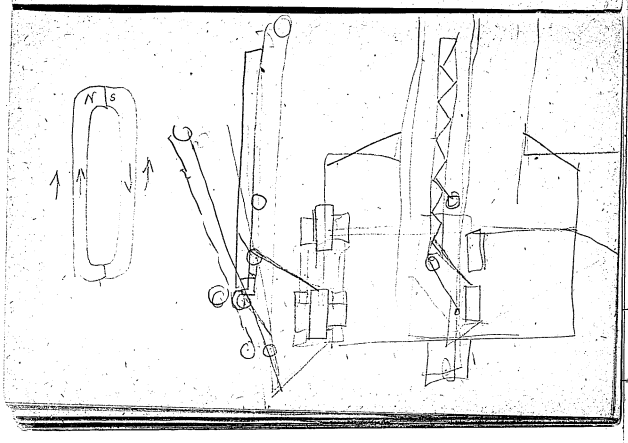
We want a good ordinary Civil
Engineer for laying out
foundations Masonry etc
who works himself not
like Brodiane does

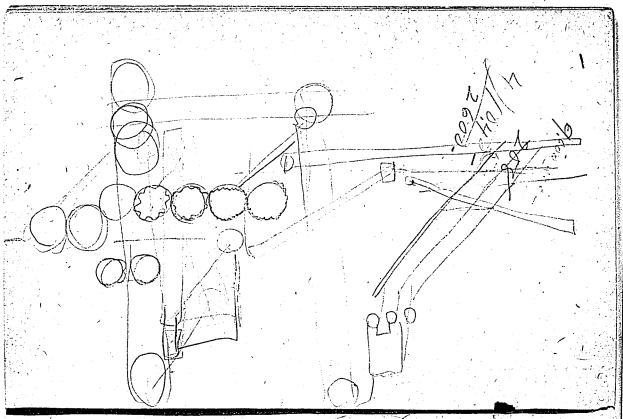
Brosio (18)

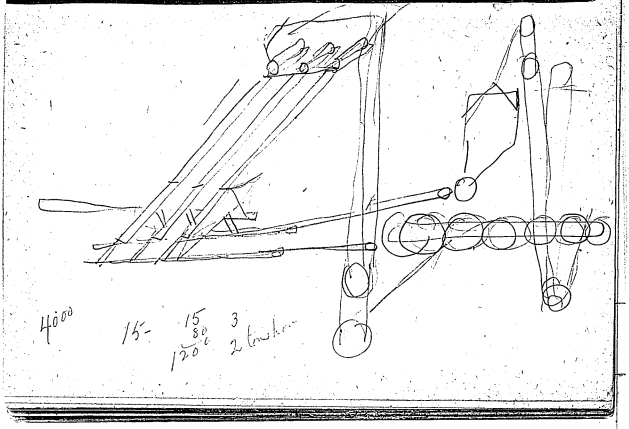

107
108
109
110
20
40
60
80
30

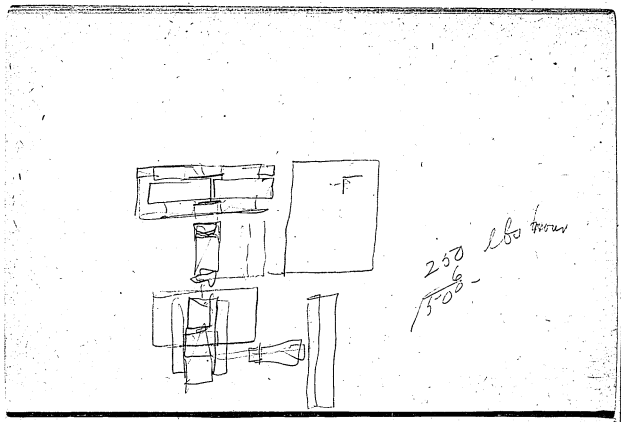


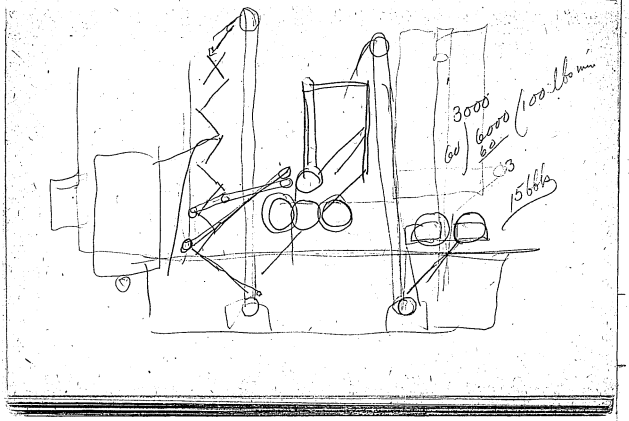

75
15
44
10
10
20
40
120
20
30
20


N
S




40.00
15-
15
50
120
3
2 twoker


F
250 lbs tension
3000


3000
60
6000
62
100 lbs
15000

5 ft 30 deep

5 30

12) 20,000 (10,000

5 ft 30 deep 10 000

10 " 20 000

80

14) 960 (685.714

840

120

200

3.00

12) 2499 (20,000

24

800 1200

480

3 months

90 5

60

14) 540 (1714

140

100

98

20

6

837000

668700

1600) 1522 (840

1440

8200

633

520
76
59

633
12
266
633
59

1625
34
6500
4875
55 25

36) 1625
36
975
975
487500
585

633
15
3165
3165
9495
32

520
32
2920
2920
1600
1728
3200
2880
320

520
95
6.15

268

1625

611) 1625
38
1300
1300
4875
4875
617

1623

34) 633000 32
34) 633 (1861
34
2793
2720
2040
2040
6

1000
50

790 1861
37500 372
372
1861
2233

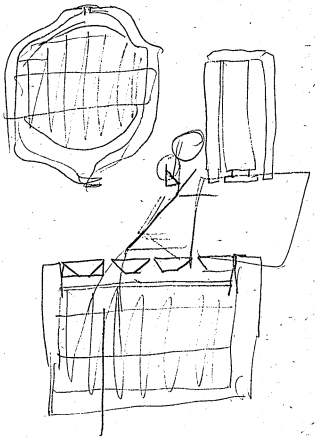
1861

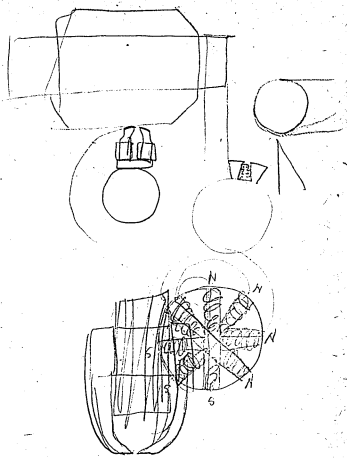
186
1625
1811

1861
11
1861
1861
2047

204
1625
1829

1625
223
1845




N
N
N
N
S
S
S

36) 130 (40
32
8
150

150
200
300000

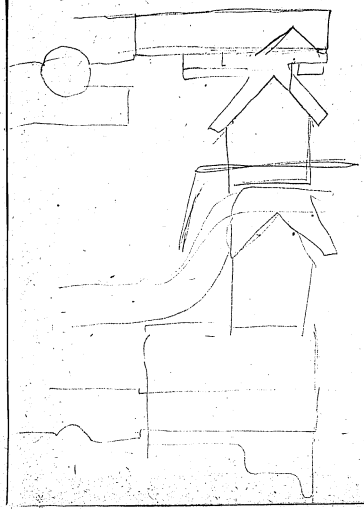
10 Hp

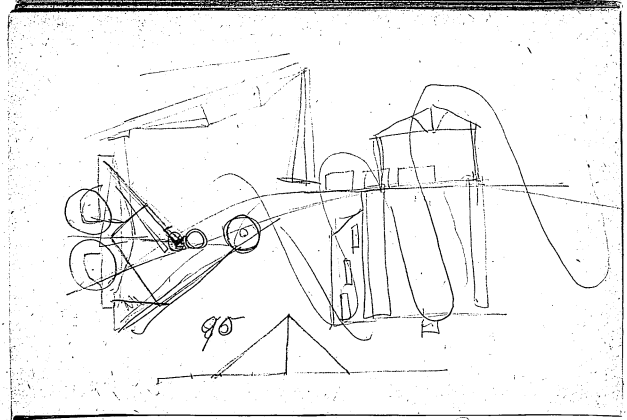
60 lbs

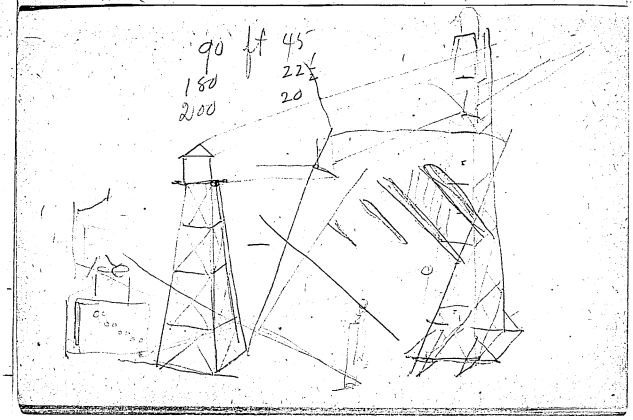
150
60
9000

150
50
7500
1500

1500




90


90 ft 45
180 22½
200 20

512 gen'l mining
108 — CPN + day
12 — mining + weighing Sampling
20 — assay + chemist —
25 Chalk grinding
45 Rolling
40 Crushed —
50 Loading
50 Extra

862 — total

180
2
360

10000
40000 (180
2240
17920
17
1800
90
54000

	$360	150		35 20
Coal roasted	100		600	17 45
" power	75		862	
oil	25		1402	105
foundry —	100			
supplies —	600			

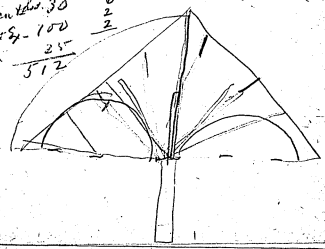
$1402 total —

10000) 140200 (14c
10000
40200

60000

20c 20 —
2000

3 - Shovels —	100	33	54	
Mack	15			
Hoist —	8			
Strip —	25	5 10	350	2000 (6.
5 Loco —	30			
Pump	5	40 —		
Yards	35		5 1/8	4
Machshop	125		16	1-6
Stra —	8			
oil —	7	4		30
Paint	5	2		
Miscellan.	8	4		
Cooper —	15	2	4	
Barge	10		2	
Blacksmith	15		4	
Carpents	5		2	
Coal grinding	10	4	2	22
Engs + chf	3	2	2	
Electricians	30	6	2	
Genl + Sy —	100	2	4	
Extra	25	2		
	512			



540
150
270
54.00
81

80
2

Cline 80000
S Frotts - 15000
Cuhart 17500
Kang - 13000
6500
60000

25500
40000
60000

50
80

12000-
15000
87.000
20000
50000
112. 20.000

22-
78
154

60-

40000

60
24000-0
24000-0

40000

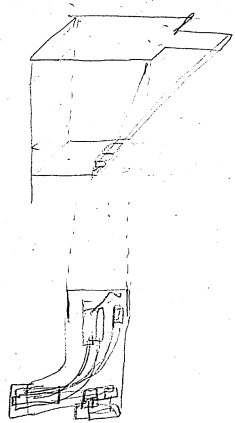
60
3
180 00

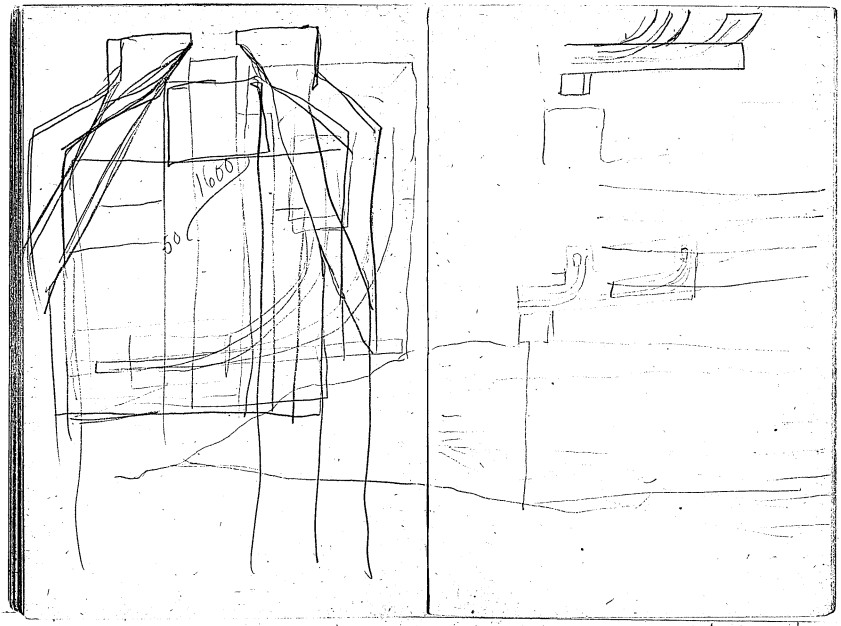
18
5
90

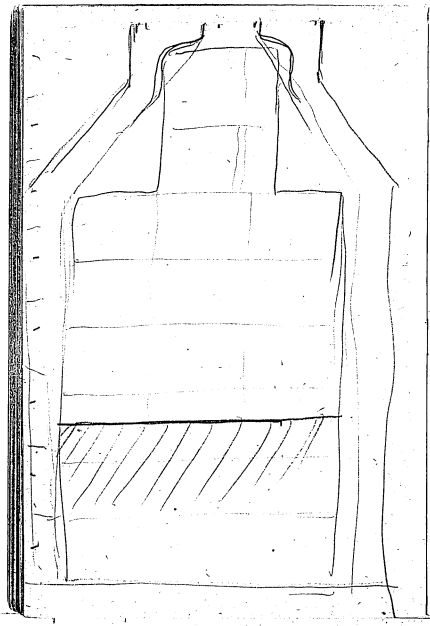
68

102
66
34-
50

80
56-
24-




1650
50



12

144
25
119

25

119
4
476
4 | 119
29

30

$100

4 | 2700000 17
670
6 350000

150 3 mac

75

2 50

750 Cars
250000

150000
100000 safety
250000

35000

250000 100000

500000

144

5 | 720

360

3.15 | 2880000 (1440 — Cylinders

20

120 ft Cylinders

Aug 10

320 plates.

Boston

Bookloover

840 ft cylinders

Bookloover's Magazine

1X2 — 40 ft = 800 [illegible]

Washington

Sealing —

2X4 — 2X2

Chicago

1. Sealing Double — will do the work with
Aluminum typewriting 2 1 man
2 clean man they should do it
6 men work plates

68000

47600 —

3.15 | 2880000 (82285 —

80

40

12 | 40 (3.3

36

4

36

$700

80 ft 1/2

2 | 320

12 | 160 (13.3 mech

12

40

36

40

133

514

532

133

626

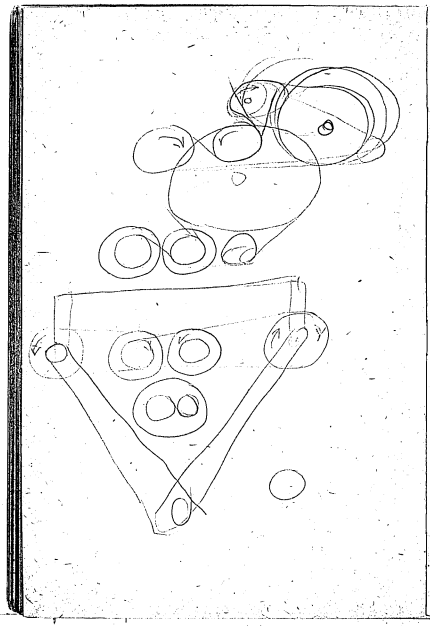
83

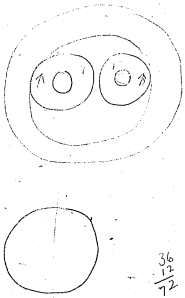
186

496

514

68362





$\frac{36}{72}$

$\frac{36}{43}$

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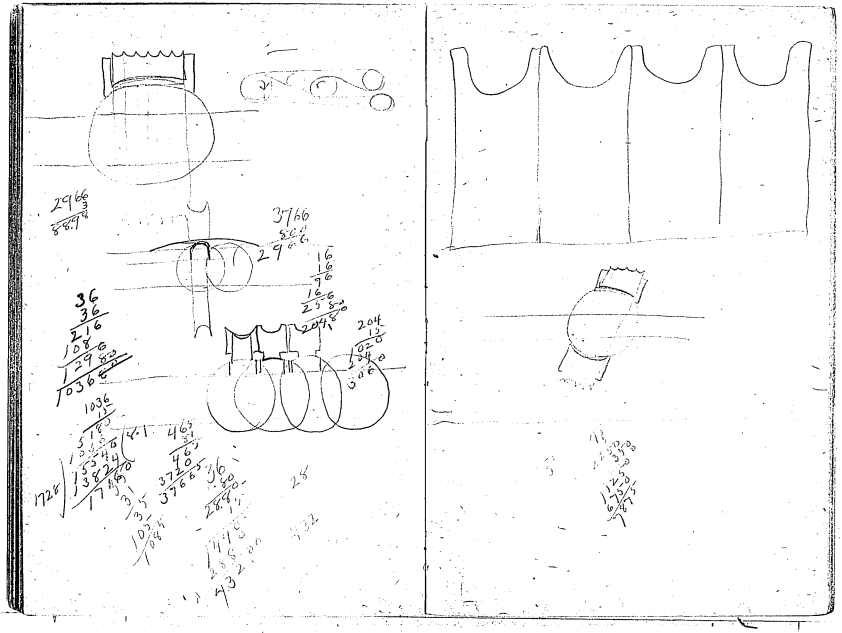


[THIS BOOK WAS USED IN BOTH DIRECTIONS. THE FOLLOWING PAGES WERE FILMED FROM THE BACK END FORWARD.]

24

6

800

2500 —

250 ft —

250 | 40000 | 16.

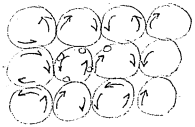
250

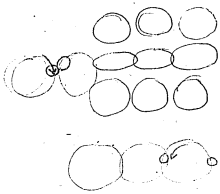
1500

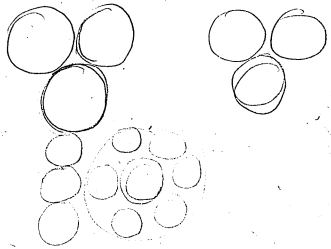
140 000 Lbs

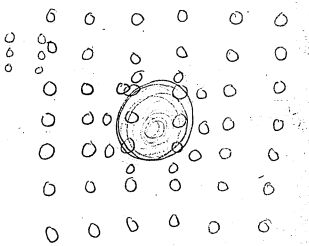
2500
16
15000
2500
40000

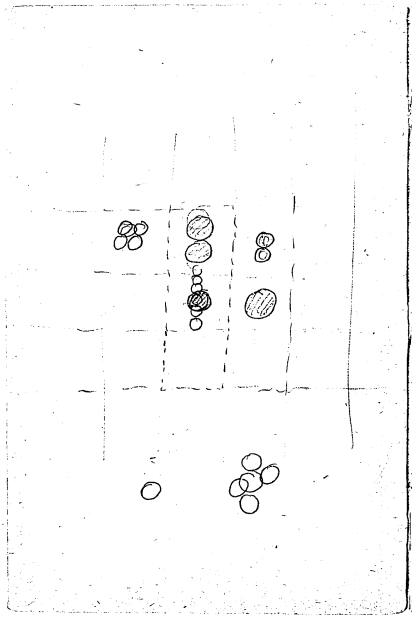
40000
35
140000
140000

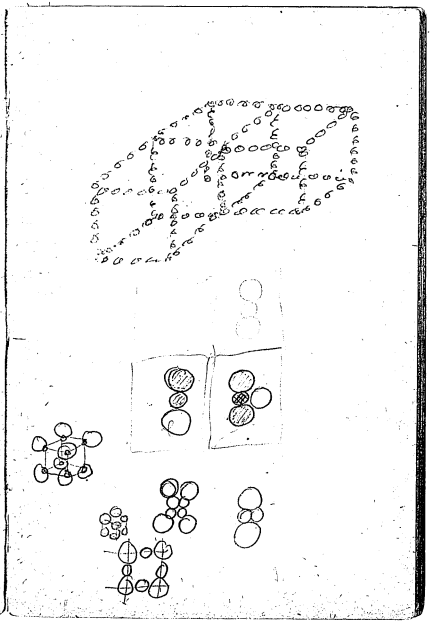


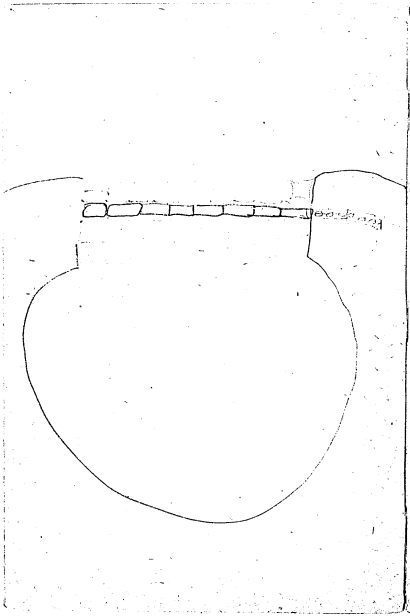


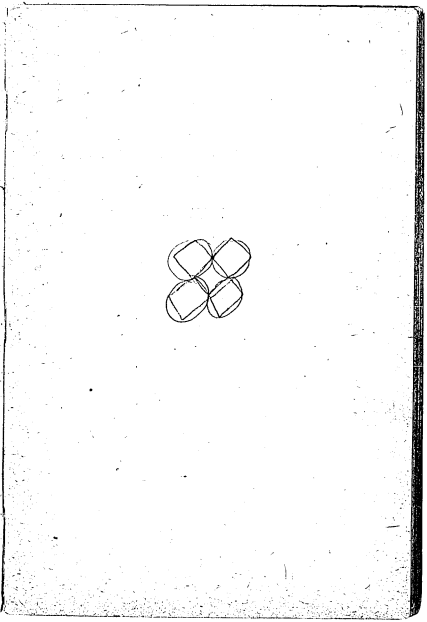


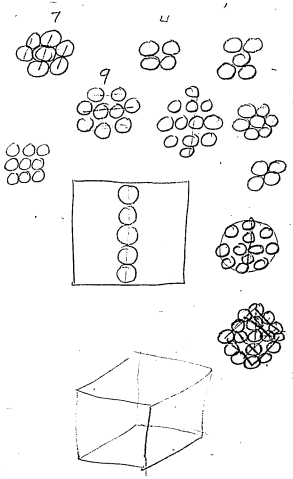








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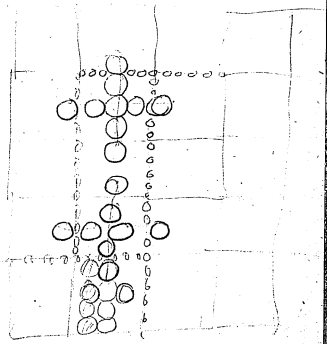
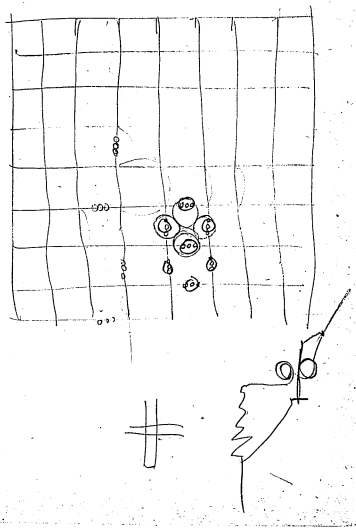
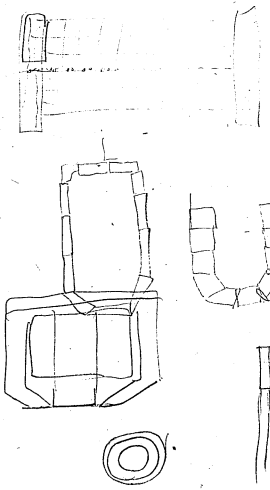






1 - Shovels

Engineer —	5.00	
Crane	2.00	
Fire	1.50	
4 Patrum	5.40	
	13.90	
	27.80	27.80

4 Drills —	1.75	
	1.35	
	3.10	
	12.40	
1 Blacksmith	3.35	
1 Helper		
	15.75	15.75
Hammer —		4.00
1 powder —		2.00
1 Drill Crew		1.35
1 Surveyor		3.00
		5.00
2 Loco Engrs —		3.50
2 Firemen		3.00
2 Brake		9.25
Track gang —	6.75	7.50
	2.50	
	9.25	
Underground Hels. —		
		82.15

CP-

1 Bottom	1,35	
2 Top	1 50	
1 grant	1 35	
3 Small R	405	
1 Furnace	1 75	
1 Middle	1 35	
1 Top	1 50	
1 a Conveyor	1 75	
1 foreman	300	
1 Boy	100	
1 Cleaner	1 35	
1 Engr	300	
1 Wiper	1.35	2430
	2430	

1 Bottom	1.35	
1 Mixer	1 50	
1 Sampler	1 35	
1 Weigher	1 70	
1 Tunnel	1 35	730
	730	

Blowers	1.75	
2 Top	3.50	
1 middle	1.75	
1 Bottom	1.75	
1 Cleaner	1.50	
1 Top 5th high	1.75	
	12.00	12.00
1 Engr	3.00	
1 Wiper	1.35	
2 3 High men	4.00	
	8.35	8.35
One Top dust Cine	1.75	
1 Bottom	1.75	
1 front Rolers	1.75	
1 Motorman	2.00	
1 Regulator	1.50	
1 Coal	1.50	
3 Coal House	5.00	
1 foreman	3.00	
1 Scraper	1.50	
1 top Clinker H	1.50	
1 bottom	1.50	
	22.75	22.75

Hauler 5th	175	
2 5th Hands	400	
1 Engr	300	
1 Wiper	135	
1 Oiler 5th	175	
3 Rescuers	525	
1 Stockhouse Top	175	
5 Loaders	675	
10 Boys	1000	
1 Foreman	300	
2 Bagmen	270	
1 Bagmaster	150	
2 Yardo Locs	400	
2 Firemen	300	
2 Brakesmen	300	
2 Switchmen	300	
1 Gypsum	175	5755
	5755	

Power House

2 Engs	600	
1 wiper	135	
2 Dynamometer	270	
1 indicator,	135	1140
	1140	

Electrician 3,00, 6,00
2 asst. - 300

Oil House
oulande man 1,50
2 mode - 270
1 farmer 200
6,20 6,20,

assay -
1 chemist. 400
2 asst 800
2 men 270 - 1470
1470

3830

450
6
9) 2700
300

2500
25
2500
2500
375000
2240) 750000 (3 ¾
672000
78000

34
2
68

60000
40000
20000

4000) 44400 (11.c
4000
4400
80000.

4000
40
2240) 160000 (71
15680
32800

72
2
144

444
306
7560
35
807
807

822
50
4000) 87200 (21
8400
1200

Coal in loading & yard
10 – 1 forum
Machine shop
2 - Forum –
20 new –
Blacksmith Sto

16,00,
7,00
80,00,
7,00 –
80 00

Recapitulation

Mine –
CP

Coal 68 –
Coal 144
oil - 15 –
Dynamit 24
Detonate 5
Supplies - 50
306

82 15
27.30
14 60
20 00
16 70
25 70
35 70
76 60
125.00
443,95

8000 ft belt Conveyor

1600 Idlers

3200 " bearings

Wt 100 lbs

8 sides bearing 1/2 inch surface Vel

10 ft minute

10 Coeff 10 lb

or 100 ft lbs min

or 5 Hp whole Mill

Hubs and Idlers 32

Coeff 12

wind 31

87

36

72

3

1 35

26

36

25

25

93

30 / 93 (3

30 / 15

2

1 5

9 / 120

Load

Load 15 lbs foot Total between

pulley 75 lbs 25 lbs belt Total

100 making 5 more horse power

Total 10 Hp

1600 Idlers – wt Load & Idlers

1600

2000

3200000 (96.9

3200 / 3200000

29700000

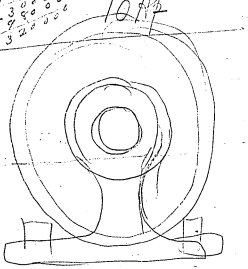
23000000

19000000

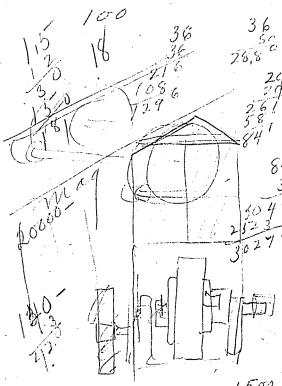
3200000

10 ft minute on tray

10 Hp



3200 / 1600000 (5



420
20000 (2.55
33000)84 0000
66 0000
18 0000
18 0000
15 0000

10)2.55 (2.55
20
35
1/20 12.75=

12 2 15

2.55 H/P

13
3
39

4000-
2000
33000)26 0000
26 0000
13 2000
13 2000
4000

4000 (2.42
72
20
144

12)2000 (166-
12
80
72
8

166
5
830-

830 166-
12
166
830
996

12)2400 (200-
2
18 Roll — 1/10
9 — 1/20

33000)10 0000 (60
200
200 0000
198 0000
2 0000
(1.82

6 Hp — 3

100000 — 33000)6000000
33000
270000
264000
6000

1500
7500
460
44
184
1890
2074

60 000-
15 000-
75 000
66 000
9 000
9 000
6 000
6 000

1728)75 000 (44

100

15
12
30
30
15

18

36
36
0
41
1086
29

36
50
26,50
29
29
261
581
841

841-
36
4046
2523
30276

200000-
9

140-
13
27

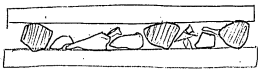
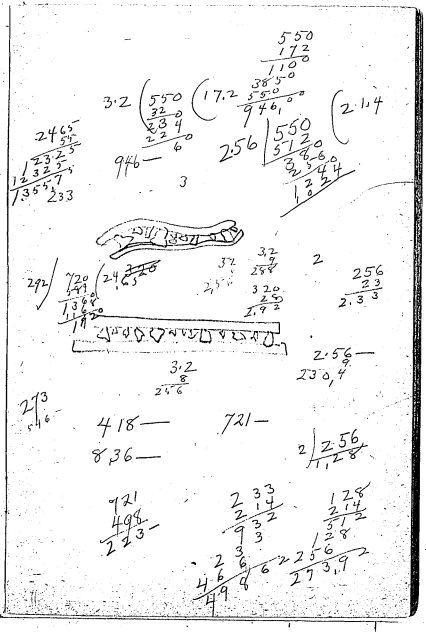
2 100 KW — 1700 Gulf 130 HP each 260
1 250 — 2650 — 325
1 250 — 2500 — 260
1 .175 KW Brook 1350 — 6850 — 226
1071

325
260
260
845

774)1000(129
774
2268
1548
6760

774)2500(323
2322
1780
1548
2320

845)6850(81
6760
900
7

774)1750(226
1548
2028
1548
4720
47

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